



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,621	11/13/2003	Anil D. Jha	10168-7076.19	2148

37462 7590 01/11/2007
LOWRIE, LANDO & ANASTASI
RIVERFRONT OFFICE
ONE MAIN STREET, ELEVENTH FLOOR
CAMBRIDGE, MA 02142

EXAMINER

DRODGE, JOSEPH W

ART UNIT	PAPER NUMBER
----------	--------------

1723

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/712,621

Applicant(s)

JHA ET AL.

Examiner

Joseph W. Drodge

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-29, 40-45, 51-54 and 62-70 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-29, 40-45, 51-54 and 62-70 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0806.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Art Unit: 1723

The disclosure is objected to because of the following informalities: Concerning the Amended Paragraph beginning at page 5, line 28; Patent Application 10/712,248 should be identified as "now patent 7,083,733".

Appropriate correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 21-26,40,41,44 and 45 are rejected under 35 U.S.C. 102(e) as being anticipated by Willman et al patent publication US2004/0118780. Willman et al, in the embodiment of figure 4, discloses treatment system, and corresponding method of treating water with such apparatus comprising: point of entry 24, reservoir system (tank 26), electrochemical device 20, 66 and 70, or 56, point of use 28 which is fluidly connected and fluidly downstream of the storage tank 26 and auxiliary point of use 104 that is fluidly connected to the electrochemical devices 66 and 70 and downstream thereof, through a recycle loop, via units 63,68,15,65 and 18 and 3-way valve 93. **A**

Art Unit: 1723

recirculation loop 62 connects or fluidly connects reverse osmosis unit 18, waste stream 37 and electrochemical devices 64 and 66, all of which is connected to downstream auxiliary use 104 by conduits 35 and 96.

For the method claims starting with claim 40, un-desired ion species are removed by the electrochemical device (paragraph 2).

For claims 22 and 41, booster pump 16 provides pressurizing.

For claims 23-25, see pretreatment stage 12 including carbon filter element 32, with reverse osmosis unit 18 also being upstream of the electrochemical devices 66 and 70 , or in the figure 3 embodiment of electrochemical device 56.

For claim 26, parameter of current control to the electrochemical device is described in paragraph 22, inherently requiring some sort of controller.

Claims 51-54,62,65 and 68-70 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirayama et al patent 6,461,512.

Hirayama et al disclose reservoir or means for accumulating water 7, water source 2 or 5, means for pressurizing (pumps P0 and P1, if necessary the water entering upstream tank 1 being “city water” or “well water”, see paragraph 2a, is already at some degree of pressure), electrochemical/electrodeionization device 6, heating or heat exchanger means HE1, HE2 and HE3 [as in claim 55], means for delivering comprising pump P2 and piping (column 4, lines 10-12) [as in claim 52] and point of use or product water distributing system (column 1, lines 20-31).

For claim 53, see pretreatment system comprising filter 3 and reverse osmosis membrane 5.

Art Unit: 1723

For claims 54 and 62, see means for adjusting electrical current parameter to the electrochemical device at column 4, lines 66-67.

For claim 65, properties such as quantity of bacterial contamination are calculated at column 2, lines 17-21 and lines 39-45.

For claim 68, see heat exchangers HE1, HE2 and HE3.

Claims 62 and 65-67, 69 and 70 are rejected under 35 U.S.C. 102(e) as being anticipated by Willman et al patent publication US2004/0118780. Willman et al disclose accumulating water from a point of use (source 24) in a storage tank 26 that is pressurized by way of booster pump 16 and transfer pump 58, to transfer at least a portion of water to electrochemical device 56, providing of electrochemical device 20 and/or 28 to remove undesired ions, and coupling to a dispensing system via distribution piping or lines to point of use/dispenser 28 or 104 (see especially figures 3 and 4). For claim 53, see pretreatment system 12. For claims 54, 62, 65, 66 and 67, current or power parameter of the electrochemical device is adjusted by periodically reversing the electric field polarity (paragraph 22).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1723

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Willman et al in view of Rela patent 6,607,668. Claim 26 possibly differs from Willman in requiring explicit recitation of a controller. However, Rela teaches microprocessor and control system for controlling a complex water treatment system including similar components to those of Willman (column 2, line 64-column 3, line 30). It would have been obvious to one of ordinary skill in the art to have adapted the Rela controller to use in the Willman system to optimize treatment of the water in response to changing raw water source parameters, flow rate demands from the downstream points of use.

Art Unit: 1723

Claims 27 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willman et al in view of Sato et al patent 6,733,646. . Claims 27 and 42 differ in requiring the point of use to be a household appliance. Sato teaches use of similar combination of water treatments to those of Hirayama where water may be supplied to household uses (column 1, lines 11-15). It would have been obvious to one of ordinary skill in the art to have utilized the Hirayama treatment system to supply household uses taught by Sato, since many household uses require highly purified water.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Willman et al in view of Hirayama et al patent 6,461,512. Claim 28 differs from William in requiring the system to include a heat exchanger. Such heat exchanger is taught by Hirayama beginning with the Abstract, in a similar treatment complex, to sterilize the water. It would have also been obvious to have utilized the heat exchanger of Hirayama with the system of Willman to sterilize the water being treated.

Claims 29 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willman et al in view of Arba et al patent 6,398,965. Claims 29 and 43 differ in requiring use of the treated water in an irrigation system Arba teaches a similar combination of water treatment elements to that of Willman with one application being for medical types of irrigation (column 1, lines 46-54 and column 2, lines 13-22). It would have been similarly obvious to have utilized the Willman apparatus or method for supplying irrigation points of use, as taught by Arba et al, since the Williams system provides highly purified and sterilized water necessary for irrigation requirements.

Claims 63 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama et al patent 6,461,512 in view of Sato et al patent 6,733,646. Claims 63 and 64 differ in requiring the point of use to be a household appliance. Sato teaches use of similar combination of water treatments to those of Hirayama where water may be supplied to household uses (column 1, lines 11-15). It would have been obvious to one of ordinary skill in the art to have utilized the Hirayama treatment system to supply household uses taught by Sato, since many household uses require highly purified water.

Applicant's arguments filed on June 13, 2006 have been fully considered but they are not persuasive as follows:

It is argued that, for claims 21-26,40-41 and 44-45, Willman does not disclose a reservoir or storage tank being fluidly connected to a point of entry, since a reverse osmosis membrane isolates feed water thereto from membrane permeate. It is submitted that claiming of components being fluidly connected does not preclude there being intermediate units/components, of any kind in between the fluidly connected units.

It is also argued that Willman fails to disclose an auxiliary use downstream of the electrochemical device. It is submitted that both 1st use 28 and auxiliary use 104 are downstream of the device, partly by way of recycling of fluid, which is not precluded by the term "downstream".

It is finally argued for this set of claims that Williams does not disclose introducing water from a point of use to a reservoir system. Such limitation is not present in the instant claims.

With respect to rejections over Hirayama, it is asserted that Hirayama fails to disclose a water treatment system comprising means for accumulating water from a source of water at a pressure exceeding atmospheric. It is submitted that the disclosure of water being city water or well water infers it initially being at some degree of line pressure, pumps P0 AND P1 further increase the water pressure, while passage through the reverse osmosis device, while introducing a pressure drop, inherently does not remove all line pressure from the water.

It is further argued that Hirayama does not disclose adjusting an operating parameter, such as electric current of the electrochemical device. The reversing of current through the device is maintained as constituting "adjusting".

With respect to claims 62,69 and 70, in response to argument that Willman fails to disclose accumulating water from a point of entry at an elevated pressure. The same response to similar argument pertaining to the Hirayama rejections applies here.

Applicant's arguments filed on 13 December 2006 have been fully considered but they are not persuasive. The arguments of 13 December 2006 lack specificity. The Response to Applicant's previously submitted Arguments continue to apply in support of the outstanding rejections of the claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1723

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 1723

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached at 571-272-1151. The fax phone number for the examining group where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

January 2, 2007

A handwritten signature in black ink, appearing to read "Joseph Drodge", is written in a cursive style.

JOSEPH DRODGE
PRIMARY EXAMINER